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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/587,568	01/10/2007	Yoshito Oki	293768US0PCT	8924
22850 7590 10/01/2010 OBLON, SPIVAK, MCCLELLAND MAIER & NEUSTADT, L.L.P. 1940 DUKE STREET ALEXANDRIA, VA 22314				
EXAMINER WALCK, BRIAN D				
ART UNIT 1793		PAPER NUMBER		
NOTIFICATION DATE 10/01/2010		DELIVERY MODE ELECTRONIC		

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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### Office Action Summary

**Application No.**

10/587,568

**Applicant(s)**

OKI ET AL.

**Examiner**

Brian Walck

**Art Unit**

1793

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 27 April 2010.  
2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.  
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 6 and 10-31 is/are pending in the application.  
4a) Of the above claim(s) 28 is/are withdrawn from consideration.  
5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.  
6) ☒ Claim(s) 6, 10-27 and 29-31 is/are rejected.  
7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.  
8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.  
10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☒ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)  
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)  
3) ☒ Information Disclosure Statement(s) (PTO/GS/US)  
Paper No(s)/Mail Date \_\_\_\_\_  
4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_  
5) ☐ Notice of Informal Patent Application  
6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Continued Examination Under 37 CFR 1.114***

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 4/27/2010 has been entered.

### ***Status of Claims***

2. Claims 1-5 and 7-9 are canceled. Claims 29-31 are newly added. Claims 6 and 10-31 are pending where claims 6, 10-22, and 24 have been amended. Claim 28 is withdrawn from consideration and claims 6, 10-27, and 29-31 remain for examination on the merits.

### ***Status of Previous Rejections***

3. The previous 35 USC § 102/103 rejections of the claims have been withdrawn in view of amendments to the claims.

### ***Claim Rejections - 35 USC § 112***

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. **Claims 6, 10-21, and 29-30 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.**

The term "excelling" in claim 6 (from which claims 10-21 and 29-30 depend) is a relative term which renders the claim indefinite. The term "excelling" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. This renders the thermal conductivity, erosion resistance, sag resistance, sacrificial anode effect and self-corrosion resistance of the aluminum alloy fin material of instant claim 6 indefinite, which renders the scope of the claim indefinite.

***Claim Rejections - 35 USC § 102/103***

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.

3. Resolving the level of ordinary skill in the pertinent art.
  4. Considering objective evidence present in the application indicating obviousness or nonobviousness.
9. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).
- 10. Claims 6, 10-27, and 29-31 are rejected under 35 U.S.C. 102(a) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over JP 2004-176091 to Kuroda et al (cited by applicant in IDS) in view of the evidentiary references the article titled "Aluminum Alloys" by Lyle et al and the article titled "Aluminum and Aluminum Alloys" by Sanders.**

Applicant cannot rely upon the foreign priority papers to overcome this rejection because a translation of said papers has not been made of record in accordance with 37 CFR 1.55. See MPEP § 201.15.

Regarding claims 6 and 27, Kuroda discloses numerous high-strength aluminum alloy fin materials for heat exchangers having high strength and excelling in thermal conductivity and sacrificial anode effect, for example alloy 1 which comprising the

following composition (Kuroda, Table 1, alloy 1), which lies wholly within the instantly claimed composition:

Element	Claimed wt%	Kuroda wt%	Lies within?
Si	0.8-1.4	1.0	Yes
Fe	0.15-0.7	0.2	Yes
Mn	1.5-3.0	2.4	Yes
Zn	0.5-2.5	1.5	Yes
Al	Balance	Balance	Yes
Mg	0-0.05	~0	Yes

Although Kuroda does not explicitly disclose that Mg is present as an impurity in the alloy, both Sanders (Sanders, page 305, "11. Aluminum Alloys") and Lyle (Lyle, page 12, "3.1.1. Impurities in the Molten Metal" and Table 4) disclose that Mg is either inherently present or is expected to be present as a trace impurity in typical aluminum alloys. Therefore, Mg is either inherently or expected to be present in the aluminum alloy of Kuroda.

Although Kuroda does not explicitly disclose the instantly claimed tensile strength before or after brazing or recrystallized grain size after brazing, when the structure recited in the reference is substantially identical to that of the claims, claimed properties or functions are presumed to be inherent. Where the claimed and prior art products are identical or substantially identical in structure or composition, or are produced by identical or substantially identical processes, a prima facie case of either anticipation or

obviousness has been established (see MPEP 2112.01 [R-3].) In the instant case, the aluminum alloy fin material of Kuroda would be expected to have the same properties or very similar properties to the instantly claimed aluminum alloy fin material because both have the same composition, structure, and purpose. Therefore, a rejection based alternatively on either 35 U.S.C. 102(a) or 35 U.S.C. 103(a) is eminently fair and acceptable.

Regarding claims 10-14, 22-25, and 29, the aluminum alloy fin material of Kuroda lies wholly within the instantly claimed composition ranges.

Regarding claim 19-21, and 26 Kuroda discloses that in alloy 1, Cu, Zr, Cr, Ti, and V are present in no more than negligible levels (Kuroda, Table 1, alloy 1). Sanders (Sanders, page 305, "11. Aluminum Alloys") and Lyle (Lyle, page 12, "3.1.1. Impurities in the Molten Metal" and Table 4) disclose that Cu, Zr, Cr, Ti, and V are present in trace quantities in aluminum metal

Regarding claims 15-18 and 30-31, although Shoji does not explicitly disclose the instantly claimed properties, when the structure recited in the reference is substantially identical to that of the claims, claimed properties or functions are presumed to be inherent. Where the claimed and prior art products are identical or substantially identical in structure or composition, or are produced by identical or substantially identical processes, a prima facie case of either anticipation or obviousness has been established (see MPEP 2112.01 [R-3].) In the instant case, the aluminum alloy fin material of Shoji would be expected to have the same properties or very similar properties to the instantly claimed aluminum alloy fin material because both have the

same composition, structure, and purpose. Therefore, a rejection based alternatively on either 35 U.S.C. 102(a) or 35 U.S.C. 103(a) is eminently fair and acceptable.

**11. Claims 6, 10-11, 13, 15-21, 27, and 30 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over JP 2002-161323 to Shoji et al (cited by applicant in IDS) in view of the evidentiary references the article titled "Aluminum Alloys" by Lyle et al and the article titled "Aluminum and Aluminum Alloys" by Sanders.**

Regarding claims 6 and 27, Shoji discloses several high-strength aluminum alloy fin material for heat exchangers having high strength and excelling in thermal conductivity and sacrificial anode effect comprising the instantly claimed composition, for example alloy 6 (Shoji, Table 1, alloy 6), which lies wholly within the instantly claimed composition:

Element	Claimed wt%	Shoji wt%	Lies within?
Si	0.8-1.4	0.8	Yes
Fe	0.15-0.55	0.2	Yes
Mn	1.5-3.0	1.6	Yes
Zn	0.5-2.5	1.5	Yes
Al	Balance	Balance	Yes
Mg	0-0.05	~0	Yes

Although Shoji does not explicitly disclose that Mg is present as an impurity in the alloy, both Sanders (Sanders, page 305, "11. Aluminum Alloys") and Lyle (Lyle, page



12, "3.1.1. Impurities in the Molten Metal" and Table 4) disclose that Mg is either inherently present or is expected to be present as a trace impurity in typical aluminum alloys. Therefore, Mg is either inherently or expected to be present in the aluminum alloy of Shoji.

Although Shoji does not explicitly disclose the instantly claimed tensile strength before or after brazing or recrystallized grain size after brazing, when the structure recited in the reference is substantially identical to that of the claims, claimed properties or functions are presumed to be inherent. Where the claimed and prior art products are identical or substantially identical in structure or composition, or are produced by identical or substantially identical processes, a prima facie case of either anticipation or obviousness has been established (see MPEP 2112.01 [R-3].) In the instant case, the aluminum alloy fin material of Shoji would be expected to have the same properties or very similar properties to the instantly claimed aluminum alloy fin material because both have the same composition, structure, and purpose. Therefore, a rejection based alternatively on either 35 U.S.C. 102(b) or 35 U.S.C. 103(a) is eminently fair and acceptable.

Regarding claims 10 and 11, aluminum alloy fin material number 7 (Shoji, Table 1, alloy 7) of Shoji lies wholly within the instantly claimed composition ranges.

Regarding claims 13, aluminum alloy fin material number 6 (Shoji, Table 1, alloy 6) of Shoji lies wholly within the instantly claimed composition ranges.

Regarding claim 19-21, Shoji discloses that in alloy 6, Cu is present in an amount of 0.15 wt% (within the claimed range of at most 0.2 wt%), Zr is present in an amount of

0.16 wt% (within the claimed range of at most 0.2 wt%) and Cr, Ti, and V are present in no more than negligible levels (Shoji, Table at top of page 7, alloy 14). Sanders (Sanders, page 305, "11. Aluminum Alloys") and Lyle (Lyle, page 12, "3.1.1. Impurities in the Molten Metal" and Table 4) disclose that Cr, Ti, and V are present in trace quantities in aluminum metal

Regarding claims 15-18 and 30 although Shoji does not explicitly disclose the instantly claimed properties, when the structure recited in the reference is substantially identical to that of the claims, claimed properties or functions are presumed to be inherent. Where the claimed and prior art products are identical or substantially identical in structure or composition, or are produced by identical or substantially identical processes, a prima facie case of either anticipation or obviousness has been established (see MPEP 2112.01 [R-3].) In the instant case, the aluminum alloy fin material of Shoji would be expected to have the same properties or very similar properties to the instantly claimed aluminum alloy fin material because both have the same composition, structure, and purpose. Therefore, a rejection based alternatively on either 35 U.S.C. 102(b) or 35 U.S.C. 103(a) is eminently fair and acceptable.

***Claim Rejections - 35 USC § 103***

**12. Claims 12, 14, 22-26, 29, and 31 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP 2002-161323 to Shoji et al (cited by applicant in IDS) in view of the evidentiary references the article titled "Aluminum Alloys" by Lyle et al and the article titled "Aluminum and Aluminum Alloys" by Sanders.**

Regarding claims 14 and 29, Shoji in view of Lyle and Sanders discloses a high-strength aluminum alloy fin material as discussed above. The specific alloys of Shoji differ from the instant claims in that the specific alloys of Shoji have a Mn content of 1.6, outside of the instantly claimed range of 1.8-3.0 wt% Mn. However, Shoji discloses that the Mn content of the alloy can be from 1.0-2.0 wt% Mn (Shoji, abstract), overlapping the instantly claimed range of 1.8-3.0 wt% Mn. In the case where the claimed ranges "overlap or lie inside ranges disclosed by the prior art" a prima facie case of obviousness exists (see MPEP 2144.05 [R-5]). It would have been obvious to one of ordinary skill in the art at the time the invention was made to have selected values for Mn that lie within the instantly claimed ranges because Shoji discloses the same utility throughout the disclosed ranges.

Regarding claims 12 and 22-25, Shoji discloses a high-strength aluminum alloy fin material for heat exchangers having high strength and excelling in thermal conductivity and sacrificial anode effect comprising the following composition (Shoji, Table 3, alloy 14), which is extremely close to the instantly claimed composition as follows:

Element	Claimed wt%	Shoji wt%	Lies within?
Si	0.9-1.4	1.0	Yes
Fe	0.17-0.55	0.6	Close at 0.55-0.6
Mn	2.2-3.0	2.3	Yes
Zn	1.0-1.5	1.0	Yes
Al	Balance	Balance	Yes

Mg	0-0.02	~0	Yes
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A prima facie case of obviousness exists where the claimed ranges and prior art ranges do not overlap but are close enough that one skilled in the art would have expected them to have the same properties (See MPEP 2144.05 [R-5]). In the instant case, the composition of alloy 14 of Shoji is close enough to the instantly claimed composition range that one of ordinary skill in the art would expect alloy 14 of Shoji and the instantly claimed aluminum alloy fin material to have the same properties.

Although Shoji does not explicitly disclose that Mg is present as an impurity in the alloy, both Sanders (Sanders, page 305, "11. Aluminum Alloys") and Lyle (Lyle, page 12, "3.1.1. Impurities in the Molten Metal" and Table 4) disclose that Mg is either inherently present or is expected to be present as a trace impurity in typical aluminum alloys. Therefore, Mg is either inherently or expected to be present in the aluminum alloy of Shoji.

Although Shoji does not explicitly disclose the instantly claimed tensile strength before or after brazing or recrystallized grain size after brazing, when the structure recited in the reference is substantially identical to that of the claims, claimed properties or functions are presumed to be inherent. Where the claimed and prior art products are identical or substantially identical in structure or composition, or are produced by identical or substantially identical processes, a prima facie case of either anticipation or obviousness has been established (see MPEP 2112.01 [R-3].) In the instant case, the aluminum alloy fin material of Shoji would be expected to have the same properties or

very similar properties to the instantly claimed aluminum alloy fin material because both have substantially the same composition, structure, and purpose.

Regarding claim 26 Shoji discloses that in alloy 14, Cu is present in an amount of 0.15 wt% (within the claimed range of at most 0.2 wt%), Zr is present in an amount of 0.2 wt% (within the claimed range of at most 0.2 wt%) and Cr, Ti, and V are present in no more than negligible levels (Shoji, Table at top of page 7, alloy 14). Sanders (Sanders, page 305, "11. Aluminum Alloys") and Lyle (Lyle, page 12, "3.1.1. Impurities in the Molten Metal" and Table 4) disclose that Cr, Ti, and V are present in trace quantities in aluminum metal

Regarding claim 31, although Shoji does not explicitly disclose the instantly claimed properties, when the structure recited in the reference is substantially identical to that of the claims, claimed properties or functions are presumed to be inherent. Where the claimed and prior art products are identical or substantially identical in structure or composition, or are produced by identical or substantially identical processes, a prima facie case of either anticipation or obviousness has been established (see MPEP 2112.01 [R-3].) In the instant case, the aluminum alloy fin material of Shoji would be expected to have the same properties or very similar properties to the instantly claimed aluminum alloy fin material because both have substantially the same composition, structure, and purpose.

### ***Response to Arguments***

13. Applicant's arguments with respect to claims 6, 10-27, and 29-31 have been considered but are moot in view of the new ground(s) of rejection.

Applicant has amended the compositional ranges of the instantly claims to fall outside the composition of Shoji alloy 14. However, the compositional ranges of 6, 10-11, 13, 15-21, 27, and 30 fall within the composition of Shoji alloys 6 and 7 as shown in the above 102/103 rejections and the compositional ranges of claims 14 and 29 fall within the broader composition limits disclosed by Shoji as shown in the above 103 rejections.

Furthermore, while the compositional ranges of claims 12, 22-26, and 31 have been amended to fall outside the composition of Shoji alloy 14, the composition of Shoji alloy 14 still is extremely close to the composition ranges of claims 12, 22-26, and 31 with the only difference being the iron content of Shoji alloy 14 of 0.6 is slightly outside of the upper limit of the instantly claimed iron content of 0.55. A prima facie case of obviousness exists where the claimed ranges and prior art ranges do not overlap but are close enough that one skilled in the art would have expected them to have the same properties (See MPEP 2144.05 [R-5]). See the above 103 rejection.

### ***Conclusion***

14. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. US 3,490,955 to Winter et al discloses high strength aluminum alloys overlapping the instantly claimed compositional limits.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brian Walck whose telephone number is (571)270-5905. The examiner can normally be reached on Monday-Friday 9 AM-6:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Roy King can be reached on (571)272-1244. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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